

Method and Apparatus for Shadowgram Formation for Optical Tomography

Abstract of the Disclosure

5 A system for optical imaging of a thick specimen that permits rapid acquisition of data necessary for tomographic reconstruction of the three-dimensional (3D) image. One method involves the scanning of the focal plane of an imaging system and integrating the range of focal planes onto a detector. The focal plane of an optical imaging system is scanned along the axis perpendicular to said plane through the thickness of a specimen
10 during a single detector exposure. Secondly, methods for reducing light scatter when using illumination point sources are presented. Both approaches yield shadowgrams. This process is repeated from multiple perspectives, either in series using a single illumination/detection subsystem, or in parallel using several illumination/detection subsystems. A set of pseudo-projections is generated, which are input to a three
15 dimensional tomographic image reconstruction algorithm.